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USSR REPORT

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CONTENTS

CONTENTS (Continued) Page

FUELS AND RELATED EQUIPMENT

CONTENTS (Continued) Page

ELECTRIC POWER AND POWER EQUIPMENT

FUTURE USSR-CEMA ELECTRIC POWER LINES PLANNED

Kiev PRAVDA UKRAINY in Russian 5 Jul 79 p 2

[Article by Ye. Vorob'yev, APN correspondent: "Long-range, High-voltage"]

[Excerpt] Two billion rubles per year--this is the money the YeES [Unified Electric Power System] makes it possible to save. Now it covers a territory of 7 million square kilometers, where approximately 200 million people live- almost four-fifths of the population of our country. The formation of this system, which now includes about 900 electric power plants with a total capacity of over 160 million kilowatts, is continuing. In the current five-year plan it is planned to build 195,000 kilometers of trunk electric lines, including 10,000 kilometers of electric power lines with a voltage of 500 and 750 kilovolts, and also the first experimental-industrial alternating current line with 1,150 kilovolts.

Put into operation at the beginning of this year was Europe's largest electric power line with a voltage of 750 kilovolts from Vinnitsa (USSR) to Al'bertirsh (Hungary). This unique line was built on the basis of an agreement between Bulgaria, Hungary, the GDR, Poland, the USSR and Czechoslovakia. The construction project is one of the important steps in translating into reality the Complex Program of Socialist Economic Integration of CEMA countries. The total length of this line is 839 kilometers. The high towers run through the territory of the Ukraine, descending alongside the village of Gumennyy, literally for a rest, to the Vinnitskaya substation. But the "respite" is brief, and from here the electric current rushes further. One after another the duty watches are changed at the Vinnitskaya substation. The reports of the men on duty are always brief: "Equipment in order, system operating excellently."

The towers of the LEP-750 [electric power line-750] end at the integration transformer susbstantion in Al'bertirsh. It was located on an area of 30 hectares and is a unique town, cloaked in a web of wires.

The builders of the Toktogul'skaya GES to Frunze LEP-500 completed the assault of Kumbel'-2. At the edges of the perpetual snows at an altitude of 3,500 meters above sea level towers were raised with wires of increased strength. Having overcome seven passes, this 200-kilometer electric power

line joins the southern and northern energy regions of Kirgizia and will be an important link in the Central Asian energy ring...

The masts of the high-voltage lines have appeared in the sea. Five towers 90 and 100 meters high with wires suspended on them are now raised above the Kakhovskiy reservoir in the Ukraine, resting with their foundations on its bottom. Wires above the sea are an unusual picture. By the way, everything is unusual here--beginning with the very idea and ending with the realization of the plan.

Already operating on the shore of the Kakhovskiy reservoir is the Zaporozhskaya GRES. A significant part of its energy is intended for regions located on the other shore. To take the line around, along the shore means 300 kilometers, but across the reservoir it is a total of about 40. In this case not only is the length of the electric power line reduced, but this also yields a saving of about 8 million rubles during construction, and also reduces the losses of electric power.

The idea was tempting. Specialists from the Gidropriyekt Institute imeni S.Ya. Zhuk set a goal for themselves: to develop a foundation for the supports which would make it possible to tow the tower through the reservoir, with it fully assembled on the shore at its whole 100-meter height, and would exclude the necessity of concreting the supports in water. The foundations had to sustain all the structural parts and withstand the hurricane winds, the pressure of ice and at the same time be light, and convenient for transporting.

All these problems were successfully solved, and five towers stood with their foundations on sites specially prepared for them made of gravel and crushed stone on the bottom of the reservoir. Then the wires were stretched and the energy of the Zaporozhskaya GRES flowed along them to the right bank.

Today the power engineers are faced with the problem of transporting the energy produced by the powerful electric power plants of Siberia to the European part of the country. Electric power lines with a voltage of 500 and 750 kilovolts cannot perform this task. Therefore a decision has been adopted about construction of a custom electric power line with a voltage of 1500 kilovolts, direct current, from Ekibastuz to the Center. This trunk line with a carrying capacity of 42 billion kilowatt-hours per year will serve as a transitional stage in the work for creation of lines of still higher voltage.

Creation of the LEP-1500 has advanced problems of particular engineering complexity. The specialists have worked out unique devices for transmitting energy of great capacity over significant distances, for transforming alternating current into direct and the reverse.

The length of the LEP-1500 will be about 2,500 kilometers. Studies have shown that with such parameters the transmission of direct current is

considerably more economical than the transmission of alternating. Soviet scientists have priority in work on the creation of direct-current long-distance transmission lines.

The Ekibastuz-Center LEP-1500 will make it possible to obtain a saving on the introduction of new generating capacities amounting to 1.4 million kilovolts. The engineering design of the line was reinforced by development of all the electrical equipment for the transformer substations and erection of a test section of the overhead line for 1500 kilovolts.

It was decided to erect the terminal transformer substations in regions adjacent to the cities of Ekibastuz and Tambov. The trunk LEP-1500 will perform the intersystem connection. Taking into account its unprecedented capacity, and the huge scales of the construction it is planned to erect the line in stages, in four phases--according to the start-up of the power blocks of the cascade of Ekibastuz state regional electric power plants.

What will tomorrow's trunk transmission lines be like? Soviet scientists feel that the basis of the future electric power lines will be the same fundamental layouts as for the Ekibastuz-Center line.

10908
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UNDERGROUND POWER PLANTS BUILT, PLANNED

Moscow KRASNAYA ZVEZDA in Russian 24 Jul 79 p 4

[Article by Ye. Yegorov: "Underground Electric Power Plants"]

[Text] In Belorussia, not far from Minsk, it is planned to build a deep-embedded underground pumped-storage electric power plant (GAES; gidroakkumuliruyushchaya elektrostantsiya). Its capacity will exceed a million kilowatts. Such plants will help successfully to solve the problems of increasing energy production in the peak hours and the consumption of the surplus of it during the night.

The scheme of their operation is rather simple: there are two basins, the upper and lower, with a height difference between them. During the hours of the power peak the water from the upper reservoir is fed to the turbine blades and produces electric power. At night the GAES uses the inexpensive surplus energy. Its turbines, adapted to operate also as pumps, transfer the water from the lower reservoir into the upper one.

Thanks to the GAES there is an increase in the effectiveness of the operation of nuclear and heat power plants. In particular, improvement of the operating regime of thermal electric power plants owing to the GAES makes it possible to save 500,000-600,000 tons of standard fuel per 1 million kilowatts of installed capacity. In addition, there is an increase in the length of service of expensive equipment and there is an increase in the reliability of energy supply. The work experience of the Kiev GAES with a capacity of 225,000 kilowatts confirms the promise of this type of electric power plant.

Being built near Moscow now is the Zagorsk GAES with a capacity of 1.2 million kilowatts. Its first phase should go into operation at the end of the current five-year plan. Being built in Lithuania is the Kayshyadorskaya GAES with 1.6 million kilowatts. Planned is the construction of a GAES on the Dnestr river with a capacity of over 2 million kilowatts. Sites have been selected for another approximately 10 pumped-storage plants. Certain GAES will be like components in large power complexes.

10908
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ACHINSK FUND-FORMING INDICATORS QUESTIONED

Moscow EKONOMICHESKAYA GAZETA in Russian No 28, Jul 79 p 16

[Letter to the editors and response by A. A. Petrov: "For Efficient Use of Thermal Energy"]

[Text] The editors have received a letter from the Achinsk Inter-rayon Enterprise of Electrical and Heating Networks. "Among the technico-economic indicators established for us," the authors write, "considered the main one is the volume of realization of electrical and heat energy in physical terms. It has a decisive influence on the size of the economic incentive funds. However during its fulfillment we are encountering great difficulties. Indeed at the enterprises important significance is now being given to the struggle for economical utilization of raw material and fuel. Since 1978 ceilings have even been set on the consumption of electrical and heat energy, and not one enterprise can exceed them. Under these conditions the system of planning existing here, which is oriented to volume valuation indicators, no longer responds to the demands made. Does not the Ministry of Housing and Municipal Services of the RSFSR propose to make changes in the system of indicators?"

The editors asked A.A. Petrov, chief of the planning and economics division of Glavenergo [Main Power Administration] of the RSFSR Ministry of Housing and Municipal Services to comment on this letter.

The authors of the letter are right. In fact, on one hand, the enterprises are fighting for a saving of heat and electric power, for lowering its expenditure, and on the other hand, the collectives of heat and power plants, for instance, are interested in releasing more of it to the consumers, certainly the evaluation of their work and incentives are made directly dependent on the volume of sales.

The fund-forming indicators for thermal power plants right now are profit and the calculated profitability. With the aim of improving the existing system of planning in our ministry it was decided to conduct an economic

experiment aimed at rational expenditure of fuel and power resources. To participate in the experiment are the Mosoblteploenergo Administration and the Bashteploenergo Production and Power Association.

For enterprises of Bashteploenergo new fund-forming indicators have been established: the total sum of income and the calculated profitability. For Mosoblteploenergo the fund-forming indicators will be the reduction in planned losses of energy in the heating networks and the lowering of specific norms of expenditure of standard fuel for the output of one gigacalorie of heat.

With the aim of encouraging rational utilization of heat at the heat and power plants the sum of the incentive funds in the case of nonfulfillment of the total sum of income for dispatched energy will not be reduced, if this was caused by a shortfall of heat for the consumers. An obligatory condition in this case is uninterrupted service to the consumers.

We are planning to convert enterprises participating in the experiment to settlements according to submitted accounts. Now the calculations are made according to paid accounts (proceeding from the sum of earnings which has entered the current account in payment for sold thermal power).

The question of conducting the economic experiment should be decided by the MVK [interdepartmental commission] of RSFSR Gosplan. The results of the experiment will help to determine new valuation indicators of the work of enterprises.

I would also like to note that the Academy of Municipal Services imeni Pamfilov recently worked out a statement about economic incentives for workers engaged in the production, transport and supply of heat, for reduction of the expenditure of fuel and power resources.

Payment of bonuses to workers according to this regulation is done for observance of the established norms of expenditure of fuel for dispatched heat energy and for lowering the specific expenditure of fuel and the norms of losses in the networks against the approved indicators. This regulation will soon be put into effect.

From the editors: The question of efficient utilization of heat energy, raised by the authors, has important national-economic significance. The ministries and departments, it is pointed out in a recently adopted resolution of the CPSU Central Committee and the USSR Council of Ministers, are obliged more effectively to use material and moral incentives for achieving a saving of fuel and power resources.

However, as is evident from the published commentary, the RSFSR Ministry of Housing and Municipal Services and the MVK of RSFSR Gosplan (which up to now have not considered the proposals

about a change in the procedure for evaluating the activity of the enterprises) have not taken due measures for stimulation of economy and thrift. This means that in the future too the collectives of the enterprises will receive incentives... for an overexpenditure of heat energy. It is the hope of the editors that the leaders of the ministry and RSFSR Gosplan will communicate to the readers about measures taken.

10908
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ATOMMASH PLANT CONSTRUCTION CONTINUING

Kiev PRAVDA UKRAINY in Russian 7 Jul 79 p 1

[Article by Yu. Baranov, APN correspondent: "Labor Rhythm of 'Atommash'"]

[Excerpts] There are still no facilities equal to Atommash in the world. Now the installation of equipment has begun here. Being readied are cranes with a load capacity of up to 1200 tons, capable of lifting the housing of the atomic reactors. A custom press with a force of 15,000 tons is being assembled. Using this press 200-millimeter sheets of metal will take on the necessary shape with the manageability of foil. Here for the first time not only in domestic but also in world practice the production of the reactors will be put on a flow-line basis.

The construction project in the Don steppe is broadening, it is gaining tempo. Completed ahead of time at the end of last year was construction of projects of the first phase. Put into operation were production capacities for producing three million kilowatts of modern reactor equipment. This year the builders will turn over for installation of equipment 120,000 square meters of production areas in the first wing, 50,000 square meters in the second, 100,000 square meters in the fourth, and 12,000 square meters in the sixth wing.

As a whole the plant should go into operation not later than 1980. In the "Basic Directions of Development of the USSR National Economy for 1976-1980" it is pointed out that the share of production of electric power at hydroelectric power plants and nuclear power plants should increase from 22 to 40 percent.

10908
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UKRAINIAN ENERGY INSTITUTE WORKS IN NORTH KOREA

Kiev PRAVDA UKRAINY in Russian 10 Jul 79 p 3

[Article by O. Zelenyak, director of the Ukrainian department of VNIPIenergoprom: "Fraternal Aid to People's Korea"]

[Text] It is known what an important role the advancing development of the energy base plays in strengthening the economy of countries of the socialist commonwealth. The Ukrainian department of the All-Union State Scientific Research and Planning and Design Institute of Industrial Power Engineering (VNIPIenergoprom) is also making its own contribution to development of heating systems and centralized heat supply for industrial enterprises and cities in Cuba, Mongolia and the Democratic People's Republic of Korea.

The collective of the Ukrainian department of VNIPIenergoprom is joined with the power engineers of the Democratic People's Republic of Korea by earlier creative cooperation. Back in 1967-1969 the department developed a plan of a heat and electric power plant in the North Korean city of Unggi with a capacity of 100,000 kilowatts, which became the source of heat and electrical supply for the industrial center of the city, including a large oil refinery. In the process of planning and construction of the heat and electric power plant in Unggi close contacts were established between workers of the Ukrainian department of VNIPIenergoprom, who were in the Demoractic People's Republic of Korea for carrying out the author's inspection, and between associations of the planning institute the Pyongyang Heat and Electrical Planning Institute. The Korean comrades studied in detail the possibility of incorporating our know-how in setting up heating systems and centralized heat supply, making it possible to achieve a considerable saving of fuel.

In turn our engineers were enriched with the experience of planning heat and electric power plants under the conditions of a mountain locality with a seismic character, and a circulating water supply according to a direct-flow scheme of sea water.

For active participation in the planning and construction of the heat and electric power plant in the city of Unggi the group of our specialists headed by Candidate of Technical Sciences A.Ye. Svichar was given government awards of the Democratic People's Republic of Korea.

Now the Unggi heat and electric power plant is reliably providing energy to the industrial enterprises of the city.

Associates of the Ukrainian department of VNIPIenergoprom have done extensive work connected with the use of cheap coals for the purposes of heat supply, which is exceptionally important for the economy of the Democratic People's Republic of Korea. The results of the projects were used by specialists in the department in the plan of a heat and electric power plant with a capacity of 150,000 kilowatts, intended for heat and electrical supply of the housing and municipal sector of the city of Chongjin, the country's large industrial center. During planning of the Chongjin heat and electric power plant the experience of joint work with Korean engineers was intensified. In particular, a significant volume of the planning of the construction part of the buildings and facilities is being performed according to the instructions of Ukrainian specialists by the collective of the Pyongyang Heat and Electrical Planning Institute.

The traditional Soviet-Korean friendship month is being marked by the collective of the Ukrainian department of VNIPIenergoprom with successful fulfillment of the plan for the first half of 1979 regarding providing energy projects with technical documentation of high quality. Here especiall attention is being given to the projects for the Chongjin heat and electric power plant in connection with the forthcoming trip to the Democratic People's Republic of Korea by a group of specialists under the leadership of the chief engineer of the project, candidate of economic sciences F.Ya. Ioffe, for implementation of scientific and planning developments and also for the conduct of an author's inspection.

Associates of the Ukrainian department of VNIPIenergoprom--a collective member of the Soviet-Korean Friendship Society--will do everything in their power in order to develop and strengthen creative relations with their colleagues, the power engineers from the Democratic People's Republic of Korea, in the name of further flourishing of socialist cooperation.

10908
CSO: 1822

BRIEFS

GUL'SHAD-TASARAL ELECTRIC LINE--Tselinograd, 4 June. Completed today, a month ahead of schedule, was the laying of the Gul'shad-Tasaral LEP-35 in the northwest of the Balkhash region. The new 70-kilometer electric power trunk line has made it possible to convert to highly economical centralized energy supply the last large center of the fishing industry on Lake Balkhash. [Excerpt] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 6 Jun 79 p 1] 10908

BAKU GAS EXTRACTION--Alekper Bagirovich Suleymanov, chief of the Kasmorneftegazprom All-Union Industrial Association answers the questions of a BAKINSKIY RABOCHIY correspondent: In the extraction of gas we have reached the level planned for 1980, having extracted last year more than 10 billion cubic meters of the blue fuel. The assignment of the first half of the current year has also been covered by approximately 400 million cubic meters. Being fulfilled successfully are the plans for setting up deposits, and there has been an increase in the effectiveness of geological prospecting. The plan for an increase in the reserves of gas, intended for the Tenth Five-Year Plan, will be secured in four years. The prospects of the presence of oil and gas deposits of developed and worked sites have been expanded. We have also approached the middle of the year with overfulfillment of the plans for production and sale of gross output. Approximately 75 percent of the growth in output was obtained owing to an increase in labor productivity. Toilers of the association made a profit amounting to 60 million rubles. All this is so, but the work of the association cannot be considered as satisfactory mainly owing to the nonfulfillment of the plans for extraction of oil, and for driving wells. This was justly pointed out at the plenum of the Central Committee of the Communist Party of Azerbaijan, held in December of last year, and at the 43rd Baku city party conference. The rates of the drop in the level of oil extraction have been sharply reduced, and this reduction is continuing. However in the first half year the indebtedness to the country came to about 30,000 tons. Also not being fulfilled are the assignments regarding an increase in the reserves of oil, and growth in this field in the volumes of production. [Excerpt] [Baku BAKINSKIY RABOCHIY in Russian 5 Jul 79 p 2] 10908

URALMASH EQUIPMENT--Sverdlovsk. Equipment created by designers, technologists and workers of Uralmash according to agreements of friendship and cooperation is shipped to 30 countries of the world. Among its new consumers is developing Afghanistan. The plant collective has manufactured for our neighbor an oil-drilling unit with a wide range. It can drill a well to a depth of 3,000 meters. The new machine is equal to a 12-story apartment building in height. It is outfitted with a set of mechanisms for semiautomatic lowering and hoisting of the drilling tool. [Text] [Moscow IZVESTIYA in Russian 14 Jul 79 p 2] 10908

BUZOV'YAZOVSKOYE OIL DEPOSIT--Ufa. Senior operator of the Ufaneft' Administration I. Khusnutdinov opened the valve of the pipeline and the oil flow from the new Buzov'yazovskoye deposit began its run to the refineries. Organized here was a new, the fifth by count, oil field of the Ufaneft' Administration. [Excerpt] [Moscow IZVESTIYA in Russian 24 Jun 79 p 1] 10908

NEW ELECTRIC LINE--Ordzhonikidze. Construction has begun on a high-voltage electric power line from the Chirkeyskaya GES, which is in Dagestan, to Ordzhonikidze. The length of the new line is 214 kilometers. It will pass along the territory of the three autonomous republics of the Northern Caucasus. When it is put into operation additional energy wil be received by the enterprises and construction sites of Stavropol'ye, Kabardino-Balkaria and Northern Osetia. [Text] [Moscow PRAVDA in Russian 21 Jul 79 p 6] 10908

NEW URENGOY FIELD--At the Urengoy gas deposit at the Polar Circle construction of a new field has begun. In contrast to the operating fields, here they will not only refine the gas, but also cool it. This will make it possible when transporting the gas across the tundra to preserve the permafrost on the route of the pipeline. When this is disturbed the tundra is turned into an impassable swamp. The capacity of the new field is billions of cubic meters of gas per year. [Text] [Moscow PRAVDA in Russian 19 Jul 79 p 2] 10908

CSO: 1822

UKRAINIAN GAS INDUSTRY LEADERS DISCUSS PRESENT AND FUTURE WORK

Gas Production and Storage

Kiev PRAVDA UKRAINY in Russian 3 Jul 79 p 1

[Series of three articles]

[Article by A. Tumanov, chief, All-Union Ukrgazprom Production Association: "To the Highest Degree"]

[Text] The initiative of machine builders and scientists in Khar'kov, who have been called upon to accelerate the creation and production of new, highly effic[illegible]equipment and progress-technology, was acti[illegible] supported by workers in the republic's gas industry. The editors have requested a number of leaders in the branch to tell about our gas workers' present and future plans.

The expanding scales of the complicated gas business, improving the reliability of gas transportation systems, and insuring a normal supply of gas all require new scientific and technical solutions and the use of modern equipment and progressive technology. We have entered into firm and business-like relationships with organizations subordinate to the Ukrainian SSR Academy of Sciences: the Scientific Research Institutes of Physico-Organic Chemistry and Coal Chemistry and the Scientific Research Institute of Electric Welding imeni Ye.O. Paton, as well as branch scientific research organizations, among which is UkrNIIgaz [Ukrainian Scientific Research Institute of Natural Gasses], which is part of our own association.

The drillers of the Ukrburgaz Association are successfully carrying out their assignments for this five-year plan. This year they are faced with large problems concerning the organization of the drilling of production wells in new areas. It is also necessary to improve the drilling technology and equipment and

raise the level of the organization, quality and efficiency of their work.

The collectives of the gas-producing enterprises have problems to solve that are no less important. The great depth of the wells, the conversion of a number of deposits to the compressor method of extraction, the introduction of modern gas cleaning and pumping installations -- all of this will increase the production workers' responsibility for strict observance of the production cycle rules.

A number of new problems have arisen in connection with the increase in gas deliveries from areas in Western Siberia. Before the end of this five-year plan, we intend to do a considerable amount of work on enlarging the Ukrainian gas transportation system and increasing the capacity of our underground gas reservoirs.

Innovations Improve Gas Production Process

[Article by V. Gradyuk, chief, Khar'kov Gas Industry Administration: "A General View of Business"]

[Text] The employees of our administration are extracting natural gas from many deposits, the largest of which is the Krestishenskoye field. In setting it up, we used scientific and technical innovations that made it possible not only to bring the production rate up to the planned level in a very short period of time, but also to exceed it. The testing and introduction of new equipment is a common sight at our enterprises. Last year alone, the economic effect of this policy was more than 1 million rubles.

We maintain close relationships with the scientists of UkrNIIgaz and the Ukrainian branch of VNIPIASUgazprom and the specialists of Ukrburgaz, the Ukrvostokneftegazstroy trust and other organizations. The common creative activities of our collectives are aimed at improving the processes of extracting and preparing conditioned gas and condensate and increasing the reliability and efficiency of the production process.

Level of Gas Industry Automation Increases

[Article by V. Dubrovskiy, director, Ukrainian branch, All-Union Scientific Research Institute of Automated Systems in the Gas Industry: "Relying on Automatic Control Systems"]

[Text] Before the end of this five-year plan, we have to do some complicated work that is related to the creation of highly

efficient automatic control systems and equipment for automating the technological processes involved in the long-distance transportation of gas.

The collective of our branch of the Institute was the first in the Soviet gas industry to develop automatic control systems for the very largest industrial associations and enterprises in the gas production branch. The first stages have already been successfully introduced at Ukrgazprom, Komigazprom, Tyumengazprom, and the following high-capacity gas transportation pipelines: Nadym-Urals-Center, Ukhta-Torzhok-Ivatsevichi-western border of the USSR. Analogous work is being done for the Soyuz and Urengoy-Surgut-Chelyabinsk and pipelines, among others.

11746
CSO: 1822

DELAY IN INTRODUCING NEW BURNER FOR TETS' CRITICIZED

Moscow IZVESTIYA in Russian 8 Jul 79 p 2

[Article by R. Bikmukhametov, IZVESTIYA correspondent, Ufa: "A 'Green Light' for the Experience of the Ufans"]

[Text] On 6 April of this year, IZVESTIYA published a report entitled "On the Verge of Introduction." It told about TETs-3 in Ufa, whose collective was able to reduce fuel consumption sharply by modernizing the station's operation. Led by Engineer F. Lipinskiy, more than 10 years ago the specialists at the TETs developed a fundamentally new type of burner, the use of which made it possible to achieve an immediate 4-5 percent increase in the heat yield of the fuel burned at the station. For this one station alone, the annual savings amounted to 60,000 tons of oil products. However, the progressive experience of the Ufans was not used extensively at many gas- and oil-burning stations throughout the country. The primary blame for this falls on those specialists at the leading All-Union Institute of Heat Engineering imeni F.E. Dzerzhinskiy who for many years obstructed the introduction of Engineer Lipinskiy's developments.

That issue of the newspaper evoked a strong reaction at the Institute. Its foremost specialists on gas- and oil-burning stations, who are under the leadership of Deputy Director V. Rubin, decided to defend their institute's "regimental honor" at all costs and wrote a wordy letter to the editors.

Their desire not to let their authority be eroded in the "energy community," as stated in their answer, can be understood, but why are they trying to confuse the issue?

For example, V. Rubin reports that the Institute immediately, and with all possible benevolence, reacted to Lipinskiy's innovations. True, committees visited Ufa several times, and with great reservations recognized the advantages of the new type of

burner, but for official introduction in the branch recommended only the developments of the Heat Engineering Institute. Meanwhile, the Ufans' experience forced itself into production. Lipinskiy's burners are being used successfully at many stations in the Urals and Bashkiria, in Izhevsk and Kostroma. Finally, the invention was patented in England, the United State, the FRG, and France.

In the reply received by the editors it was also stated that more efficient burners have been developed at the Institute.

However, here is what N. Verkhovskiy, chief engineer of the Bashkirenergo Association, has to say about that: "We tested those and other burners in our stations. The ones developed in the Institute's laboratories always produced worse results, and we replaced them with Lipinskiy's burners."

Incidentally, on 11 June Verkhovskiy called together some leading technical specialists, who unequivocally wrote: "In Bashkirenergo we long ago introduced and are now successfully using the burners developed by Candidate of Technical Sciences F. Lipinskiy in all our TP-230 and PK-10 boil, at TETs-3 and TETs-4 in Ufa, and at the Salavat and Sterlitamak stations. The experience of Ufa's TETs-3 in burning high-sulfur fuel oil, as reported in your newspaper, is basically correct."

And here we reach the main point, which was not noticed by the All-Union Heat Engineering Institute. In the report, the author first wrote of the progressive experience of TETs-3's collective, which -- together with the Kostromskaya GRES -- has achieved the best indicators in the country for a number of years. Actually, in addition to Lipinskiy's burners, other innovations that are no less interesting are also used there. The introduction of this experience at all Soviet gas- and oil-burning stations would make it possible to reduce the annual consumption of oil products by several million tons. Really, does this national economic goal not deserve the scientists' attention? However, Deputy Director V. Rubin did not say a word about this question, which was raised in the newspaper.

Clearcut proposals were made at the branch's scientific and technical council, which met in November of last year. Their essence is as follows: to set up, under Soyuzglavremont, a special enterprise that, in the shortest possible amount of time, must introduce a highly efficient method of burning sulfurous fuel, with as little surplus air as possible, at all gas- and oil-burning stations in the country.

The Ufans' experience, which promises a savings of many millions of tons of fuel, should finally receive its start in life.

11746
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FEATURES OF SAFETY RULES FOR TRUNK PIPELINES OUTLINED

Baku VYSHKA in Russian 5 Jul 79 p 2

[Article: "Safety Rules for Trunk Pipelines"]

[Text] In order to promote safety and create normal conditions for the operation of trunk pipelines, in addition to preventing unfortunate accidents on pipelines, the USSR Council of Ministers has issued a decree that confirms the safety rules for trunk pipelines.

The rules define the order of marking pipeline traces and the points where they intersect rivers and canals, and establish safety zones along the traces and underwater crossings of pipelines, as well as around related structures (pumping, compressor and distribution stations, reservoir areas, and others).

Without the written permission of the enterprises (organizations) operating them, in safety zones it is forbidden to erect any buildings or structures, plant trees and bushes, store fodder, fertilizer and materials, build crossings and thoroughfares through pipeline traces, do any construction, installation or explosive work, pasture cattle, establish watering places, cut timber, or do several other kinds of work.

The rules forbid any type of activity in a safety zone that would disrupt the normal operation of the pipeline or result in damage to it. Citizens who discover damage to a pipeline or a discharge (leak) of the product being transported are obligated to report it immediately to the enterprise (organization) operating the pipeline or to the ispolkom of the local Soviet of Peoples' Deputies.

Enterprises (organizations) operating pipelines and agencies of Gosgaznadzor and Gosgortekhnadzor [RSFSR State Committee of the Council of Ministers for Supervision of Industrial Safety and for Mining Inspection] are given the right to suspend work that is being done with disregard for the rules.

Officials and citizens who are guilty of breaking the rules will be made to answer according to the established order.

11746
CSO: 1822

IMPROVEMENT NEEDED IN CONSTRUCTION MATERIAL REQUISITIONING

Moscow SOVETSKAYA ROSSIYA in Russian 26 Jun 79 p 1

[Part of article by V. Matviyenko, deputy chief, Glavtyumen'-neftegazstroy: "Deliveries 'by Eye'"]

[Text] Glavtyumen'neftegazstroy [Main Administration for Oil and Gas Construction in Tyumenskaya Oblast] supplies equipment to the gas and oil fields in Tyumenskaya Oblast. During the 10th Five-Year Plan its volume of business will be about 2.4 billion rubles.

In one trust or another, there frequently arise surpluses of some materials and shortages of others. In order not to delay the completion of projects, the northern trusts must be supplied with what they need, on a timely basis, from the bases in Tyumen', Novosibirsk and Labytnangi. Only aviation, which is expensive, can assist us in this. In the 1977-1978 navigation year alone, about 18,000 tons of different cargoes were transferred by aerial transport. More than 9 million rubles were paid for the aviators' services. If these cargoes had been moved by water, it would have cost only 200,000 rubles, or one-fortieth as much.

In order to avoid disproportions in deliveries, the Main Administration's Supply Service is carrying out an extensive and laborious project to determine exact requirements for materials, but it is difficult to "guess" everything down to the last nail. The primary reason for this is that the calculating methods are imperfect.

It is possible that the calculation of the necessary amount of materials according to the so-called "millionnik" [translation unknown] method may be suitable for a branch, it does not determine the true requirements and does not allow for changes in the structure of construction work done by a main administration, much less a trust. Although the determination of

requirements according to the specific material consumption rate achieved per million rubles does reflect a change in the structure, it is also imperfect because it legitimizes overconsumption, the replacement of some materials with others, and so on. Besides this, all of the methods listed suffer from a common flaw: material requirements are only considered in general, on a single line, such as "rolled metal goods," "pipe," "glass," and so forth. However, the rolled metal goods needed in construction work are of the most variegated types and quality, even though the amounts are rigorously defined, as is the case with other materials.

How can we eliminate defects in deliveries of materials for construction projects? It is easy to solve the problem with the help of planning estimates. In order to do this, it is only necessary to require the institutes to send the builders two documents along with the plans: a general composite list of the requirements for all materials for the project and a completion card. The use of such documentation will automatically increase the suppliers' responsibility for delivery and the builders' responsibility for economy at the construction site.

We should also take into consideration the fact that most plans are standard ones. In addition to this, the entire calculation of the cost of construction work is performed in the institutes on the basis of material consumption data, while the builders must determine these figures for themselves. This conceals errors, miscalculations and exaggeration.

A second cause of overconsumption of materials is the disparity in the planning estimate allocation periods and the compilation of requests for materials.

How do the suppliers deal with these paradoxes? Every one, so as not to miscalculate, orders more materials than are needed. Therefore, some of them have excess stock, or surpluses, while others have shortages.

In connection with this, the excess above-norm materials normally deteriorate or become obsolete and unneeded. USSR Gosstroy and Gossnab need to correlate the requisition and documentation presentation periods. It is obvious that, given the existing quality of documentation preparation, it would be correct to change the presentation period to a year earlier than the date presently used. In this case our construction projects will be of high quality and will be finished on time and there will be fewer unfinished projects.

11746
CSO: 1822

FUELS AND RELATED EQUIPMENT

NEEDS OF TYUMENSKAYA OBLAST GAS WORKERS DISCUSSED

Moscow SOVETSKAYA ROSSIYA in Russian 28 Jun 79 p 2

[Article by G. Sulimenkov, chief, All-Union Tyumengazprom Association: "The Way to the Gas"]

[Text] Western Siberia's gas production workers have been given difficult assignments for this year. They are faced with producing 115 billion cubic meters of gas and drilling 170,000 meters of production wells. In order to do this, it will be necessary to bring the Vyngapurovskoye field to its planned production level, outfit 139 wells, and put three installations for the complex preparation of gas and three dozhimnyye compressor stations into operation at Urengoy. Besides this, it is necessary to build a gas-cooling unit and bring to full capacity the installation for refining condensate from Urengoy into diesel fuel and various grades of gasoline.

The Tyumenites are not accustomed to large amounts of work. A more measured pace is the rule in Siberia. However, a lot depends on efficient interaction among all the ministries and departments involved in exploiting the gas and oil fields there. As time goes on, the more important become the questions of infrastructure development: transportation lines, power supply for enterprises, compressor stations, the construction of living quarters.

The lack of a reliable transportation network is now a serious problem in the development of the North. We are being appeased, it is true -- the Surgut-Urengoy railway line is under construction, and when it is finished the basic freight flow will move along it. We cannot wait, however. It is no secret that even with the arrival of the railroad it will be necessary to move the basic mass of freight to the northern gas fields by water. It is obvious that the RSFSR Ministry of the River Fleet should draw some conclusions from this and strengthen the material base of the Irtysh River Steamship Line.

As has already been said more than once, the construction of paved roads is lagging behind in the North, and there they are as essential as air itself. The lack of interindustry communication links slows down the tempo of drilling and capital construction. The general contractor -- the Tyumendorstroy trust of the Ministry of Transport Construction -- is barely finishing half its plan for the introduction of paved roads. The construction of these trunk roads in the area of Nadym has been disrupted. True, the roadbuilders did lay 19 kilometers of roadbed from the wells to the enterprises, but these roads are suitable for use only under winter conditions.

As the volume of gas extraction and transportation grows and as more equipment is moved into the fields, the problem of supplying power to northern settlements and industrial enterprises becomes more acute. Small, autonomous electric power stations of the PAES-2500 type produce too little electricity and are not able to provide gas production workers with enough power. In order to improve the reliability of the power supply, the construction of electric power transmission lines has been stipulated. However, for several years USSR Minenergo [Ministry of Power and Electrification] has continually postponed putting them into operation. In 1978, for example, only 156 of the planned 410 kilometers of power transmission line began being used.

From year to year, the compressor shops delay the introduction of new power units. In turn, this delays the outfitting of compressor stations with electric drives. In connection with this, there has been a sharp increase in electricity consumption. In 1978, 270 million kilowatt-hours were used, but this year consumption will increase to 1.8 billion kilowatt-hours.

Meanwhile, the amount of electricity supplied to the gas producers still does not correspond to the level of their assignments. Last year, Minenergo's Zapsibelektroset'stroy trust delayed the introduction of electric power transmission lines for the main compressor station in the Medvezh'ye field, in the settlement of Pangody. The trust still has not begun raising the 110-volt power lines for the substations in Urengoy. This has made it difficult to start the fourth installation for the complex preparation of gas and subsequent projects.

The Uralelektroset'stroy trust has not fulfilled its plan for bringing power transmisstion lines to the Priobskaya, Samsanovskaya and Turtasskaya compressor stations.

USSR Minenergo specifies that construction starts in gas fields be made uniformly throughout the entire year. However, under

conditions of swampiness and roadlessness, electric power transmission lines can be raised only during the winter. And the power engineers are trying to postpone the beginning of the construction work. For example, the Zapsibeleketroset'stroy trust (I.A. Kirtbaya, administrator) moved the introduction of 110-volt power transmission lines at the Nadym compressor station from the fourth quarter of this year to the first quarter of 1980, although it should -- on the contrary -- have set an earlier date, since the basic work will be completed in the upcoming winter season. This "initiative" was also followed by the leadership of the Uralelektroset'stroy trust (V.L. Baryshnikov, administrator).

The gas workers had high hopes for the introduction into operation of the "Northern Lights" floating electric power station at Nadym, but because of the sluggishness of some leaders in the Ministry of Construction of Petroleum and Gas Industry Enterprises, it is still not operating -- the necessary shore structures have not been built.

USSR Minenergo is setting up a 500-volt power transmission line from Sur ut to Urengoy. Power from the Surgutskaya GRES will soon be reaching the gas producers in Urengoy. This is heartening. In the future, however, it will also be advisable to build a powerful GRES (operating on natural gas) in the area of this gas condensate deposit, extend the power transmission line along the pipeline traces and connect it to the Ural power system. This will completely satisfy the need for electricity and will make it possible to convert the compressor stations to electric drives.

Last but not least, let us talk about conditions for people. The virgin gas fields of Tyumen' are now being developed by thousands of enthusiasts who must be supplied with living quarters and social, cultural and domestic services. It is clear that a further increase in gas extraction will be unthinkable without the creation of a reliable backup: a strong material and technical base, living quarters, schools, kindergartens, clubs, and so on. It is no secret that we sometimes have to turn down those who have arrived to work, although there is plenty for them to do. For example, the compressor stations in Sorum and Long-Yugan lack almost half of their complements. Additional people cannot be sent there because of a lack of living quarters.

The gas industry has settled itself firmly in the Siberian soil. It still requires the concentration of efforts of many ministries and departments. Railways and roads are needed, along with river ports, powerful electric power stations, and living quarters. And they are needed right now.

11746
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PIPELINE BREAK IN TYUMEN'

Moscow SOVETSKAYA ROSSIYA in Russian 3 Jul 79 p 2

[Article by Yu. Burov, "Sovetskaya Rossiya" correspondent, Tyumen': "Tough Landing: the Story of how an Emergency was Cleared up on the Tyumen' Gas Line"]

[Text] A report has just been received in the dispatcher room of the Tyumen'gazprom All-Union Association:

"Repair work completed. Line being filled with gas."

Just a week, one-third of the normal time, has been needed to clear up an extensive emergency on one of the gas lines of Tyumenskaya Oblast.

The break occurred eleven kilometres to the south of the Punginsk Pump Station. In a few moments, gas under a pressure of half a hundred atmospheres had made shreds out of 109 metres of steel pipe with a wall thickness of 14 millimetres.

The gas workers in the oblast are utilizing about 7,000 km of large-diameter pipeline. A big part of this system stretches over very marshy land, crosses dozens of rivers and streams. The underground gas lines are raised only in winter when everything is frozen solid. Right now the job was to deliver to the site of the accident over trackless territory more than 300 metres of pipe and heavy equipment -- bulldozers, pipe-laying machines, excavators and welding units.

Within only a few hours, the people and machines had been delivered. Powerful tractors driven by Pavel Stepanchenko, Boris Kravchenko and Yuriy Zamyatin made their way to the work site with difficulty, helping one another along. A group of heavy helicopters under the direction of pilot Nikolay Babentsev quickly transferred about 200 metric tons of pipes from the Peregrebnoye and Komsomol'skiy settlements.

However, after the first attempt to use the equipment it became clear that it would not be possible to get through even a metre of the quagmire without

the help of people: mud was spurting out from under the crust, and the tractors kept sinking deep into the mud. Meanwhile, not only did the pipes have to be joined into one length and insulated, but the trench had to be dug out so that the new piece of line could be installed. But even without a load, the pipe-laying machines were sinking and getting stuck. The way had to be corduroyed.

L. G. Rafikov, director of the Tyumen'transgaz Association and one of the formen on emergency jobs, a man who has worked for more than twenty years in the gas industry and has seen a lot of accidents, told us:

"You rarely get to see such well-coordinated organization among unacquainted people, and such an appreciation of the importance of the job. They worked sixteen and seventeen hours a day..."

The corduroy job demanded not only physical effort, but endurance and patience as well. The mire voraciously gobbled up the logs and begged for more. Team leader Aleksandr Merzlyakov, worker Aleksey Lysov and student team leader Vyacheslav Barantsov of Voroshilovgrad Machine Building Institute stayed on the job longer than all others. Black with soot, swatting at the horseflies and gnats, these lads finished the corduroy on time.

The welders were coping successfully with their job as well. They took each weld as a major victory.

In conclusion, let us hear from V. M. Polyakov, chief of the Tyumen'gazprom unified dispatcher administration.

"Those who use Tyumen' fuel, a third of all fuel recovered in the nation, scarcely felt the consequences of the accident. By putting additional pump facilities into operation we managed to compensate for the section that was broken. The gas flow as usual was uninterrupted, and the gas range flames burned evenly."

And there is one more piece of information for the reader. The accident was not through anyone's negligence. According to preliminary conclusions of specialists, the pipe burst because of changes during the transitional winter-spring period in the temperature conditions and the state of the ground (unusually high flooding).

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WORK IN TYUMEN' CONTINUES DESPITE FLOODING

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 10 Jul 79 p 1

[Article by B. L'vov, correspondent of the press center, Ministry of Construction in the Petroleum and Gas Industry, Tyumenskaya Oblast: "In Defiance of Nature"]

[Text] We have been flying for two hours, and the helicopter lights show only the widely flooding Irtysh. One can see only the tips of pine trees above the water here and there. Only occasionally do dime-sized islands emerge on the surface, crowded with equipment, pipes and people lit up by the bright glare of a welding arc.

"The work front has been narrowed down to the limit" explains A. Bershteyn, manager of the Moscow Welding and Millwright Trust of the Ministry of Construction in the Petroleum and Gas Industry. "Almost everything is under water. Without helicopters we'd never get to the line..."

The pipeline stretches for 409 kilometres, delivering thousands of tons of wide-fraction hydrocarbons from the Nizhnevartovsk gas refineries to the Tobol'sk Petrochemical Combine now under construction. As in most cases in Siberia, the route is not an easy one. A fourth of it goes through swamps, crosses the Dem'yanka, Bol'shoy, Turtas and Bol'shoy Salym rivers, dozens of forest streams, dense wooded areas. The collectives of the Samotlortruboprovodstroy, Vosstokgazspetsstroy and other trusts have spread out their divisions over this enormous work site.

Transport of liquid hydrocarbons to Tobol'sk must be assured by the end of this year. deadlines are pressing. And now comes a flood like none that even the old locals can remember. The hottest month of the year, July, has already come into its own, and the water in the river is holding at a stage far above normal. Our helicopter has landed by turns on the sections directed by V Belyayeva, M. Barulya and V. Komzov. Everywhere it's the same story:

"The high water has stopped progress..."

Under these difficulties, builders are taking advantage of the slightest opportunity to continue work. Envoys of the Moscow Welding and Millwright Trust, acting on the "worker relay" principle, have already welded about a hundred kilometres of running sections. More than 20 kilometres of pipes have been connected into the main line.

The petroleum, condensate or gas stream rushes through the steel river under a pressure of tens of atmospheres. The swampy ground of West Siberia is not a very reliable footing. If one is not careful, it may happen that a pipe is torn from the underground prison under the action of heavy loads and thrown up to treetop level.

Even the so-called deadweights cannot always help. These are heavy ferro-concrete blocks or segments that are supposed to confine the pipe in the trench, but they are simply tossed aside by the force of the stressed metal.

Scientists and production workers of the Ministry of Construction in the Petroleum and Gas Industry have managed to solve this problem. At their suggestion, the builders have begun using harpoon guns to hold down the pipeline in flooded areas. These guns fire anchors with blades welded to the tip that expand under ground. The anchor easily penetrates the marshy layer and enters solid ground to any predetermined depth. Tests have shown that it is nearly impossible to pull it out. Yu. Marakulin's harpoon teams have made thousands of shots and fastened tens of kilometres of pipeline permanently to the bottom of the Dem'yanka Swamp.

...Water is lapping at the site of the main structures. The collective of Nefteyuganskgazstroy still has a lot of work to do here: setting up a pump station, arranging the reception and collection of the product, installing a boiler room and a number of other facilities. But the workers are not shirking before the elements. Everything is ready so that work can start just as soon as the water recedes. The schedule calls for work around the clock.

The builders and millwrights of the Ministry of Construction in the Petroleum and Gas Industry are fully conscious of the importance of the construction project for creating a stable raw material base of petrochemistry in West Siberia. Putting the line between South Balyk and Tobol'sk into operation on time means more thousands of tons of synthetic rubber and other chemical products.

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MATERIAL-EQUIPMENT BASE OF CONSTRUCTION ORGANIZATION IN WESTERN SIBERIA

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 6, Jun 79 pp 6-8

[Article by P. Kuritsyn]

[Text] Western Siberia has a decisive role in increasing the production of petroleum and gas in our country.

While in 1975 the ratio of Western Siberia in the total petroleum production in the USSR was 30.1%, in 1980 it will increase to 50.8% and in the following five years it will reach 56%.

The basic increase in gas production in the very near future will also be primarily in Western Siberia (Tyumenskiy region).

The party and the government are devoting vast attention to the petroleum-gas complex of Western Siberia. Over ten billion rubles were directed toward developing and assimilating it in 1970-1975. Capital investments in the petroleum-gas industry of that region exceeded 20 billion rubles in 1976-1980.

The problem posed by the party and government before the Soviet people on assimilating the petroleum-gas complex of Western Siberia was formulated in the speech by Comrade L. I. Brezhnev, general secretary of the CC CPSU, chairman of presidium of the USSR Supreme Soviet, at the 18th VLKSM congress. Comrade L. I. Brezhnev noted that the importance of Western Siberia to the future of the Motherland increases daily. In only ten years, this taiga kray was transformed into the main petroleum base of the country. A powerful gas and chemical industry is being developed there now. On the Ob', stressed Comrade L. I. Brezhnev, a territory of one million km^2 is being assimilated economically. This is about the same as the area of Spain, Italy and England put together. Today, Tyumen' produces almost half the Soviet petroleum and a great amount of gas. In the next ten years, it is planned that the basic increase in the production of gas and petroleum and the valuable chemical raw materials produced from them will come from the Tyumen'.

The necessity of transporting vast amounts of petroleum and gas from Western Siberia to the central regions dictates the use of powerful and superpowerful pipelines 1220 to 1420mm in diameter.

Climatic, geographic, hydrogeological and other special features of this region determine the difference in structural solutions, methods of laying pipe, the technology and organization of construction of petroleum and gas main pipelines, and the means and methods for protecting them against corrosion.

Inasmuch as in Western Siberia the construction industry and its production base with relation to construction volumes is not developed sufficiently, it is necessary either to import construction structures, parts and other materials from the central regions of the country, or to create a local production base, which involves great expenditures of money and, mainly, time.

Supplying the facilities of the petroleum-gas industry with material resources from the central regions of the country is not consistent with the possibilities of transport.

The greatest part of the freight shipments to the northern regions of Western Siberia falls on the river fleet; however, in view of severe climatic conditions, low temperatures and long winters, the navigation periods of the rivers does not exceed three to five months. The short navigation period during which the river fleet must bring in construction structures, materials and freight in the volume necessary for doing the work in six to eight months, dictates the necessity of creating a large insurance reserve, corresponding warehouse sites, river ports, moorage and reloading bases.

Yet, due to the very swampy territory of Western Siberia (about 60% is swamps) laying pipe in summer is a very complex process. Because of that, structural work, parts, materials, construction machines and devices are transported to the facilities by trucks in winter.

It is also necessary to note the small population of Western Siberia and, therefore, the lack of labor resources for the volume of work to be done.

These special features create a number of economic and technical problems.

First of all, powerful petroleum-gas pipelines require great capital investments. The reduction in the negative effect of this on the economy of the government can be achieved only by a sharp increase in the rate of construction. Thus, scientific research, planning-design and production collectives of the country as a whole and of the industry must find ways, technical facilities and construction methods that would provide high rates of construction in spite of its complicated nature and climate conditions.

The development of Western Siberia petroleum-gas complex is related to the development of labor resources. However, population growth here is limited by the social infrastructure. This also applies to factors that determine the technical policy of the Minneftegazstroy* in building facilities for the petroleum and gas industry. To reduce expenditures for the social infrastructure, it is necessary to utilize methods for the organization of construction that would allow the completion of the posed problems with a minimum of labor resources from the outside.

An important factor that determines technical policy is the development of a production base and transportation network. Technical thought should be directed on finding ways to create production bases for the construction industry in the shortest time. Also needed are the use of structures, the methods of their production and installation which insure building facilities in the shortest possible times with the minimum labor resources. It is very necessary to equip organizations with trucks and construction machines suitable for operation at low temperatures and in swamps.

The experience of building up the fields of Western Siberia indicated that the successful fulfillment of the main problem, to reduce the length and laboriousness of the work, i.e., to raise the efficiency of capital investments, requires new in principle solutions in organizing construction that take into account specific industrial region conditions.

One such solution is the comprehensive modular method. Its use improves a complex of economic indicators -- material and labor of construction-installation work time and cost of erecting the facilities and transporting materials are reduced. The manufacture of such modules (BKU) is being increased to disseminate this efficient method most widely. Thus, according to the plan for developing and locating production bases for the Minneftegazstroy organizations, the BKU output in 1980 and 1985 will be 89 and 209 million rubles respectively.

The Minneftegazstroy is following a number of other directions of technical progress. These are water-repellent pipe insulation, cementing, anchoring the pipelines and using new equipment for laying petroleum and gas mains.

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*[Ministry of Petroleum and Gas Construction]

The expedition-watch method of construction which will reduce capital investments considerably for the development of the infrastructure will be used widely.

High rates and large scales of facility construction in the petroleum and gas fields in Western Siberia have a strong impact on the nature of the development of its material-equipment base.

The material-equipment construction base (MTBS) represents a totality of the construction materials industry and the building construction and parts industry. It also includes machines equipment and transportation facilities of construction organizations, their mobile and stationary installations, repair plants and shops, garages and parking places.

The national economic value and the specifics of MTBS development are determined, primarily, by the special nature of its relation to capital construction that provide directly for putting in service new production capacities in all sectors of the national economy, and creating the necessary material conditions for expanding socialist production and improving the welfare of the workers. The MTBS output is almost entirely intended for capital construction and makes up over half the material resources utilized here.

The most important condition for developing the material-equipment construction base is the balance of its elements. This means that the capacities of the construction-installation organizations and the volumes of production of all kinds of material resources and services for construction must correspond primarily to the volume of construction-installation work. This requirement can be met only by implementing a systematic investment process which includes the development of arrangements for developing the material-equipment base in the region; preparing technical-economic substantiations for developing large construction industry enterprises; preparing enterprise construction plans and assimilating their capacities (increasing them to rated ones).

The regional-industrial plan was developed in accordance with the "Instruction for preparing plans for developing and locating a material-equipment construction base" (SN-418-70, Moscow, 1970). The following was accomplished in accordance with these instructions.

Norms for consumption of material-equipment resources and services per one million rubles of estimated construction-installation work were determined on the basis of progressive planning solutions. The technical condition of existing enterprises was investigated; a forecast of increasing their capacities by intensification was made, etc. The volume of production and volume of service for 1985 was established by taking into account the utilization coefficient. A comparison of the volume of production and its requirements made it possible to determine deficits

in resources. Having studied the possibilities for making up the deficit by interdepartmental and interregional deliveries, the part of the deficit to be covered by increasing capacities was determined. After investigating transportation arrangements, the locations of enterprises and their capacities were designated.

We will consider several special features of the material-equipment construction base.

It is well known that in the initial development period the petroleum and gas industry was based on the petroleum and gas resources in the Azerbaydzhan SSR, Northern Caucasus and Western Ukraine and the Volga economic regions. During the years of building up the field, a material-equipment construction base was established that could have played a large role in providing material resources to the petroleum and gas regions of Western Siberia. However, this production base is thousands of kilometers away from Nadym, Urengoy and the Middle Ob', which makes the existing capacities practically "worthless."

Actually, it is practically impossible to utilize the truck transport and construction machine bases (garages and mechanization bases) as they cannot be moved to Siberia. It is also difficult to utilize their other resources, in particular, enterprises for producing reinforced concrete, woodworking products, structural metal, etc.

Thus, construction of petroleum-gas industry facilities has a mobile nature which leads to a territorial discontinuity between the production and consumption of products and services for construction. This discontinuity cannot be compensated for by transport due to various factors.

Therefore, it is necessary to create a base in the new regions which requires considerable capital investments. However, the established practice of planning capital investments does not take into account the special features.

The main criterion for evaluating capital investments allotted to the industry is an average norm per million rubles of increase in the estimated cost of construction-installation work. This is close to the actual calculation of capital investments for the country as a whole; however, it is unacceptable for the regions being assimilated in Siberia and the East.

The capital investments norm for the Minneftegazstroy should be different from the constructions norm for the country as a whole and will be increased systematically, since the construction of facilities for the petroleum and gas industry in the future will shift to Siberia and the East which, in its turn, will "devaluate" the existing base capacities in the central and western regions of the country. It is necessary to note that the Minneftegazstroy enters the new regions before other industries which makes it impossible to achieve any kind of cooperation.

Most important for construction in Eastern Siberia is the production of the following: 1) prefabricated reinforced concrete, 2) structural metal; 3) modular structures; 4) water-repellent insulation and porous fillers.

In 1978, prefabricated reinforced concrete capacities exceeded 660,000m^3. Four of the ten plants produce prefabricated reinforced concrete manufacture products for large-panel housbuilding.

The Western Siberia region is poor in resources of the raw materials needed for manufacturing high strength crushed stone. This stimulates the development of artificial light filler production. The almost entire lack of a base in Western Siberia for producing heavy fillers from natural strong stone limits, to a considerable extent, the possibility of creating new enterprises for manufacturing prefabricated reinforced concrete. Therefore, it is expedient to use fine sand as fillers in the Surgut and Nadym regions.

Yet, by 1985, it is planned to fill part of the reinforced concrete requirements by interdepartmental deliveries. It is planned to cover the determined deficit of 942,000m^3 of prefabricated reinforced concrete in 1985 (including 235,000m^3 products for large-panel housebuilding (KPD)) by deliveries from the European part of the country and the output of a number of new enterprises. It is planned to build enterprises with a total capacity of 940,000m^3, including 200,000 products for the KPD. All enterprises will be changed over to manufacturing new, improved series which meet modern requirements in planning and which take into account the special climatic condition of Western Siberia regions. By 1981, a KPD plant will be put in operation at Nadym designed for manufacturing products for 112 series of housings with a total area of 100,000m^2 per year. By that time, the capacities of the Surgut Housebuilding Combine will reach 430,000m^2 per year and will continue to increase further. It is planned to modernize the KPD plants in Tyumen' and the Urals.

Structural metal requirements will be met by building necessary enterprises in Tyumen', Surgut and Tomsk.

In 1985, the volume of BKU production at the Sibkomplektmontazh Association will reach 105 million rubles. The deficit in BKU production, taking into account deliveries of block-boxes from the Minneftеprom [Ministry of Petroleum Industry] and the Mingazprom [Ministry of Gas Industry] enterprises will be in the amount of 95 million rubles. It is proposed to cover it by increasing the capacities of the support base in Tyumen' and building a prefabrication enterprise at Tomsk.

Existing enterprises will be able to satisfy the capacity requirements for applying water-repellent insulation to pipe (for 560km of pipe) and for building new shops (with over 160km of pipe) in the Bogadinka Settlement of Tyumenskaya Oblast and at Strezhevoye of Tomskaya Oblast.

It is planned to build shops at Surgut and Nadym to cover the deficit of porous fillers. Capital investments for the comprehensive development of the material-equipment base are planned for 1981-1985.

Experience indicates that the efficiency of capital investments depends greatly on how proportions of such investments are implemented.

Of the total volume of capital investments in the MTBS, 45% are used for acquiring and repairing construction machines, devices and trucks. Of the money planned for enterprise development, 3.3% will be spent on maintaining existing capacities, 18% -- for reequipment, expansion and modernization and 79% -- for building new enterprises.

The problem originates with locating new enterprises. If enterprises are to be located taking into account labor resources and costs of the construction of facilities, amenities and the development of the infrastructure, it is not always feasible to tie them down to places of concentrated construction.

The results of investigations by the NIIES [Scientific Research Institute of Economics of Construction] of the USSR Gosstroy attest to the necessity of locating material-equipment bases in Western Siberia in the following manner.

Enterprises with a service radius of up to 1500km (supporting-administrative bases) should be built in cities of assimilated regions, with a service radius of 300 to 500km (supporting bases) -- at large centers of concentrated construction. Enterprises intended for servicing consumers in a radius of 50 to 60km should be located in individual centers of concentrated construction and at construction points.

The Sibkomplektmontazh base is an example of a supporting-administrative base; the production base of the Tomgazstroy -- of a reference base; and the one at Urengoy -- of a pioneer base. Mobile services are also planned.

Thus, a necessary condition for providing balanced material-equipment resources and raising the technical standard of building petroleum and gas industry facilities is the accelerated development of its industrial base.

The existing disproportionate creation of capacities for the production of material resources for construction may be eliminated by the following measures. It is necessary to obtain money from customers and include it in the construction estimates of gas and petroleum pipeline facilities of the construction industry. Capital repairs of machines and devices are to be made at the plants that manufacture the construction equipment and the trucks. It is planned to use money obtained by centralization in construction project estimates for tempory buildings and structures. Structural metal and special reinforced concrete products should be manufactured by the Minmontazhspetsstroy [Ministry of Installation and Special Construction Work] and the Minpromstroymaterialov [Ministry of Construction Materials Industry].

All of this will facilitate an increase in the efficiency of capital investments in developing the petroleum-gas complex of Western Siberia.

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PIPELINE CONSTRUCTION MUST INCREASE IN WESTERN SIBERIA

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 6, Jun 79 pp 1-3

[Editorial: "Rates of Construction Must Increase"]

[Text] Pipeline transport is the determining factor in the development of the fuel-power complex and is of vast importance to the economy of the country. It has a constantly greater effect on raising the efficiency of social production. Pipeline transport plays an important role in the petroleum-gas complex, and participates in producing a considerable share of the national income.

At present, the total length of main pipelines is 180,000km and, at the end of the Tenth Five-Year Plan period, will be about 200,000km. Pipelines, 1220 to 1420mm in diameter, designed for pressures of 75kg-force/cm^2, are built on very tight schedules. Minneftegazstroy [Ministry of Petroleum and Gas Construction] subdivisions build annually 9000 to 10,000km of petroleum and gas main pipelines and erect a considerable number of above-ground facilities.

However, the interests of the national economy dictate the necessity for still higher rates of construction of power-transport facilities and the development of field facilities. To achieve this, it is necessary to reduce the construction schedules three to four times compared to norms.

The activity of all Minneftegazstroy collectives should be aimed at the solution of this exceptionally complex problem.

Construction subdivisions of the industry, under very complicated conditions of the last winter, solved successfully the problem of building the most important mains in swampy and flooded regions of Western Siberia: the Surgut-Polotsk petroleum and the Urengoy-Chelyabinsk-Petrovsk-Novopskov gas pipelines. Over 2300km of pipe were welded and laid on these routes in January-April. As a result, there were premises

for putting in service on time powerful pipelines that are of huge national economic importance. The success in this job was facilitated by the large organizational work of main administrations and trusts on mobilizing subdivisions to fulfill the set tasks and on developing socialist competition, as well as the efficient help of party and Soviet organs in implementing individual kinds of work. RR transport workers made a considerable contribution to the building of the most important petroleum and gas mains. They delivered over two million tons of freight to the routes in a short time.

Construction in Western Siberia is being done at high speed. In the first quarter of 1979 alone, 33.3% of the annual volume of work was assimilated. This is 19% more than in the corresponding period last year. The great production successes of the Siberian workers made it possible for the industry to fulfill about a quarter of the annual program of construction-installation work in three months of 1979. The following were placed in operation: installations for comprehensive petroleum preparations with a capacity of 7.5 million tons per year; mine pumping and compressor stations; and 71,000m^2 of housing and other facilities. Tasks were fulfilled on increasing the productivity of labor in construction and reducing the cost of construction-installation work.

The highest output was achieved on Communist Subbotnik Day dedicated to the 109th anniversary of V. I. Lenin's birthday. The established task norms of many collectives and columns working on the most important construction sites Surgut-Polotsk and Urengoy-Chelyabinsk-Petrovsk-Novopskov were overfulfilled considerably. Construction-installation work in a total amount of eight million rubles was completed; more than 1.3 million rubles of industrial products were manufactured. Over one million rubles was earned for the fund to help fraternal Vietnam and to build specialized health establishments.

The wide participation in the All-Union Lenin's Communist Subbotnik Day by workers, engineers, technicians and employees of the industry demonstrated very graphically their increased labor and political activity.

The achievement of the highest output on Communist Subbotnik Day facilitated an increase in the rates of production. As a whole, the Minneftogazstroy organizations release facilities for service much sooner than specified by norms. However, on individual routes, plan tasks are not always fulfilled.

In a number of cases, due to the unsatisfactory supply of material and equipment, resources and interruptions in transport, many subdivisions of the industry have not worked regularly and have not eliminated serious shortcomings in the organization of construction.

Thus, the Glavvostoktruboprovdstroy, the Glavtruboprovodstroy and the Soyuzpodvodgazstroy did not complete work on high-priority sections of the Perm'-Kazan'-Gor'kiy (second line) and did not release the entire length of the gas pipeline for operation in April 1979. Work was done slowly on the gas pipeline routes of the Gryazovets-Leningrad, Usa-Pechora, Tartu-Rakvere, etc.

Several associations and trusts permitted slow development on the construction of the most important facilities in Western Siberia. Thus, the Tatneftestroy Association worked poorly in the Tyumenskaya Oblast and, moreover, in the Permskaya and Orenburgskaya oblasts. The importance of facility construction was underestimated in other regions by the Bashneftepromstroy and Tuymazneftestroy of the Glavneftegazstroy and by the Turkmenneftegazstroy Association. Unsatisfactory work was done on high-priority pumping and compressor stations by organizations of the Glavvostoktruboprovdstroy, Glavsibtruboprovodstroy, Glavuzhstruboprovod-stroy, Glavtruboprovodstroy and the Ukrgazastroy Association. A lag was permitted in building the Mubarekskiy Gas Reprocessing Plant, as well as a number of facilities on the Buzachi Peninsula in the Mangyshlakskaya Oblast.

Planned targets were not achieved in housing construction, especially, in Western Siberia. Individual facilities of the construction industry are being built at slow rates.

Proper attention is not being given in some subdivisions to improving labor conditions and safety techniques, and competition is poorly organized for fulfilling government plans and socialist obligations ahead of schedules. All of this permitted delay in implementing the plan for the four months of 1979.

This situation is due primarily to the fact that managers of main administrations, associations and trusts did not mobilize the collectives fully to put facilities and capacities in service on the definitely established schedule.

For timely implementation of production tasks, primarily, it is necessary to improve discipline and increase responsibility at each work section. The efforts of all workers in the industry must be directed toward further improvement in economic activity, and finding and putting into action new reserves of construction production.

The duty of the main administration, association and trust managers is to analyze the results of the production-economic activity thoroughly during the past months of the Fourth year of the five-year plan period, take measures to eliminate existing shortcomings and mobilize collectives of their subdivisions to fulfill absolutely the measures developed by the Minneftegazstroy "Measures for improving the supply of fuel to the national economy and developing pipeline transport."

These measures, taking into account the fact that a reliable supply of fuel during the 1979-1980 winter season will depend to a considerable extent on the development of pipeline gas transport, provide primarily for concentrating material-equipment resources on the most important construction sites. To insure gas deliveries in the planned volumes to the central regions of the country, the following facilities must be put in operation: sections of the Urengoy-Chelyabinsk-Petrovok-Novopskov and Nizhnyaya Tura-Perm'-Gorkiy, as well as a number of compressor stations.

To increase the transit capacity of petroleum and petroleum products pipelines, it is planned to release for operation in the second quarter the Surgut-Polotsk petroleum pipeline on the Surgut-Perm' section (1185km) with the Konda and Platina pumping stations. It is planned to put in operation ahead of schedule (in the third and fourth quarters) a number of pumping stations on the Lisichansk-Kremenchug and Kuybyshev-Lisichansk petroleum pipelines as well as the Yuzhno-Balykskiy GPZ [Gas Processing Plant] - Tobol'skiy Petroleum-Chemical Combine petroleum products pipeline.

The success in achieving the indicated program depends greatly on the preparations for the work in the winter of 1979-1980. The measures provide for advance concentration of resources, materials, equipment and devices at the most important facilities to utilize the advantages of winter construction in swampy and hard-to-reach sections. In planning winter work, special attention must be given to the engineering preparation of the route, advance construction of overpasses, installation of complicated sections of the pipelines and technological centers, clearing the route and freezing the swamps. It is planned to supply the subdivisions with special facilities and devices to make it possible to utilize, to the maximum extent, the winter construction season and the period between seasons.

Besides construction in Western Siberia, much work must be done to build up facilities in oil fields and to lay pipelines on the Buzachi Peninsula. New capacities must be put in service for producing, reprocessing and transporting gas in the Uzbek SSR. The rate of the UKPG-1 construction must be increased at the Kengizkul'-Khauzak Field, the Kengizgul'-Khauzak-Mubarek gas pipeline and the Murabek Gas Processing Plant. The collectives of the Soyuzgazpromstroy, Glavneftegazmontazh and Glavneftegazelektrospetsstroy associations with organizations of the Mingazprom have adopted socialist obligations jointly to put capacities at the Mubarek GPZ ahead of schedule.

Socialist competition, as noted at the November (1978) Plenum of the CC CPSU, is a tested, efficient means for fulfilling planned tasks, multiplying labor successes and for communist training of people.

A new powerful impulse toward the development of socialist competition was given by the CC CPSU decree "On the 50th anniversary of the First Five-Year Plan for developing the national economy of the USSR."

A complex of measures is being implemented in the Minneftegazstroy system directed toward the further improvement of the organization of socialist competition. The results of the production activity of the subdivision and the fulfillment of socialist obligations are considered every quarter, and measures are taken to eliminate detected shortcomings. The problem is posed and solved of fulfilling absolutely, by each organization and enterprise, the tasks on accelerating scientific-technical progress, comprehensive mechanization and improving the organization of work and management.

Economic work is being strengthened in the industry. The movement is being broadened to improve technical-economic indicators, reduce the cost of construction and of manufactured products, and for thrifty use of material-equipment resources, fuel and electric power.

Socialist competition was organized among builders, designers, transport workers, suppliers and operational workers on the principle of the "labor relay race." A movement under the slogan "Five-year plan task -- with smaller brigades." headed by comrades Buyanov, Kil'dyushev, Nezhdanov and Silant'yev is being adopted more widely.

Marking the International Year of the Child, the competition in the industry for fulfilling and overfulfilling the planned tasks and adopted obligations by each production collective on putting in operation facilities for keeping them healthy, the organization of education and rest for children acquired a mass nature. Numerous subdivisions supported the patriotic initiative of Comrade Shcherbakov's brigade (Sibkomplektmontazh Association), who decided to release for operation above the plan a large children's establishment. The monitoring of the construction progress of nurseries, kindergartens and stationary pioneer camps was strengthened in the industry. Measures are being taken to improve labor conditions, everyday life and rest periods for women working at enterprises and working sites of the ministry.

The constant increase in the efficiency of socialist competition, the strengthening of its ties with economic work, the dissemination of all new, progressive ideas originated by the creative initiative of the masses, facilitate an increase in production rates of the petroleum and gas industry enterprises, as well as in housing and cultural-personal service facilities.

Of great importance to the further development of the initiative of the industry's workers is the organization in 1979-1980 of socialist competition of creative multiple-skill brigades of inventors and innovators in Minneftegaz subdivisions. The basic problems of the new movement are

further acceleration of scientific-technical progress, mechanization and automation of technological processes, collective development and utilization in practice of the most efficient solutions which increase the productivity of labor, the reliability of the facilities being built and the life of machines and equipment.

It is necessary to attract more workers in the industry to creative associations and to devote special attention to the participation of young people in the development and introduction of progressive technical solutions.

Engineers, technicians and scientific workers play a great role in achieving the best final results of activity. Competition between specialists on the basis of creative plans must develop further. These plans provide for the participation of engineers and technicians in solving such problems as accelerating the increase in the productivity of labor, increasing the efficiency of production and the quality of work, introducing the latest achievements in science and engineering, reducing the time for creating and assimilating new machines and devices, reducing the time of building facilities, utilizing production funds efficiently, saving resources, etc.

Of great help in developing the creative activity of specialists further is "Recommendations and developing and implementing by engineering-technical and scientific workers individual and collective creative plans," prepared by the All-Union Council of the Scientific and Technical Soceity and the Scientific Council on Socialist Competition Problems at the AN USSR and the VTsSPS.

Raising the efficiency of various forms of socialist competition, disseminating advanced experience, improving the organization of labor, eliminating shortcomings in every link of management and production -- all of these are great reserves for increasing construction rates.

However, reducing the time of putting petroleum and gas industry facilities in service is unthinkable without using new equipment and technology and without providing construction sites with progressive materials and equipment.

Pipeline subdivisions must be equipped with more powerful machines and devices manufactured in the northern version. A program is being developed in the industry to improve equipment for working in swampy and flooded sections in the summer. Production of more than 30-ton swamp trucks has begun. Machine building plants of the Minneftegazstroy also manufacture powerful ETR254 rotary excavators; production is being organized of 25-ton pletevoz [?] tractors with rubber-metal caterpillar tracks and TZP251 hydraulic dredges. It is planned to utilize more effi[illegible]ly "Sever-1" machines on pipeline routes which can weld 1.5 to 2k[illegible] shift.

To increase the life of petroleum and gas mains, it is necessary to accelerate the production of insulated pipe at the plants and expand the production of efficient insulating materials.

To accelerate above-ground construction, it is necessary to bring to life a comprehensive program of further development of the unit-set method in the industry. This program calls for the following: organization of production, delivery and installation of large-size units; designing facilities with separation of the above-ground part from the zero elevation cycle and consequent installation of consolidated units; manufacturing new efficient materials, compact technological and KIP [Control and measuring instrument] equipment; creating complete mobile inventory warehouses, repair bases and shops; developing recommendations and norms for bases, watch and expedition watch settlements.

Builders of the petroleum and gas industry, having eliminated existing shortcomings and by using internal production reserves, are concentrating their efforts on increasing the work and improving its quality. There is no doubt that the workers of the industry will do everything possible for the successful fulfillment of national economic plans.

2291
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EFFICIENCY OF DEVELOPMENT: GIPRONIIGAZ

Moscow ZHILISHCHNOYE I KOMMUNAL'NOYE KHOZYAYSTVO in Russian No 6, Jun 79, p 27

[Article by Y. P. Shchurkin, candidate of technical sciences, director of the Gproniigaz [Government Scientific Research and Planning Institute for Gaz] , V. G. Golik, candidate of economic sciences, deputy director]

[Text] In his speech at the November (1978) Plenum of the CC CPSU, Comrade L. I. Brezhnev stressed that "the course on efficiency is inseparable from the acceleration of scientific-technical progress... New in principle scientific ideas and technical solutions, concentration of forces on key directions of national economic development -- this is where our scientists should concentrate their efforts."

The search for new scientific ideas and technical solutions -- is the main direction of the work of the Government Scientific Research and Planning Institute, the Gproniigaz. Created over 20 years ago, it became truly the scientific and planning center of the RSFSR gas industry. Metallurgy giants --legendary Magnitka, the Chelyabinsk Tractor Plant and many other industrial enterprises and TETs were gasified in accordance with its developments; gas supply systems and gas equipment systems were built and are being built in the Far East, in the west, in the Far North and in the south. The institute completed 60 gas supply arrangements for autonomous republics, krayr oblasts, cities in the RSFSR and the Russian Federation as a whole.

In 1978, some 1200 gasification projects for cities and villages and industrial and municipal-personal service facilities were released. In accordance with the institutes developments, construction-installation work was completed ahead of schedule and with high quality on supplying very large industrial enterprises which changed over to gas fuel -- the Novo-Kemerovskaya TETs (first stage of 13 boilers), the Kemerovskaya GRES, the first stage of Atommash at Volgodonsk, etc.

The above-ground detachable reservoirs, the high capacity tank-trucks of frameless design for transporting liquefied gas, electric and flame vaporizers, infrared radiation burners, facilities for mechanizing the GNS [Gas filling stations] , devices for monitoring conditions of gas pipelines designed in the institute and introduced in series manufacture are being used more and more widely in the industry. Author's certificates and patents were obtained for turboject burners, automatic control of furnace burners, automatic control of firing and the monitoring of combustion.

At present, 34 plants of six ministries manufacture 28 kinds of equipment, devices and apparatus designed by the institute (a total of about two million units per year). The number of conditionally freed personnel in the RSFSR gas industry as a result of the introduction of our developments, is over 10,000 persons per year. The savings due to the scientific investigations is 5.2 rubles per ruble of expenditures.

The decisive condition for increasing the efficiency of the enterprise is the acceleration of scientific-technical progress. Our scientists, jointly with the Glavgaz of the RSFSR Ministry of the Housing-Municipal Economy, prepared a long-range plan for the development of the gas economy of the country up to 1990, and determined the basic directions of scientific-technical progress in the industry and its results. They are working on the 1981-1985 five-year plan (for the Russian Federation) and forecasting the development of equipment and the use of the blue fuel in various oblasts of the USSR national economy up to 1990 and 2000.

The institute continues investigations and is expanding them on the problem of "Long-range development of the gas economy, improvement in methods of planning and building gas supply systems." In particular, a search is being made for optimal methods for calculating and raising the reliability of planned and modernized gas supply systems, average pressure gas distribution systems, centralized propane-butane supply systems, a comprehensive system for controlling the construction quality of gas distribution pipelines, and means for mechanizing the building of pipelines and structures for them.

In the light of the 25th party congress, directives on the necessity of efficient utilization of metal products and saving material resources, reduction in the use of metal and an increase in the service life of the networks acquire great importance. The Giproniigaz recommended new construction and repair methods for the steel routes by using plastic pipe. Scientifically substantiated proposals are being made on replacing expensive seamless pipe with electrically welded pipe made of rimmed and semikilled steels.

The most important problem of economic activity at the modern stage is raising the efficiency of production in every possible way. As applied to the gas economy, it is formulated as follows: developing scientific bases and the technical means and measures for increasing the operating efficiency of the gas supply system. The institute gave special attention to improving the operation of the distribution networks (creating a complex of facilities for repairing and replacing pipelines, devices for diagnosing their condition and finding gas leaks where the insulation is damaged; servicing the equipment in houses, as well as developing telemechanization facilities and automatic control systems for the gas supply.

The Giproniigaz planned the expansion of the investigation of subjects on the problem of "Methods and technical facilities for utilizing liquefied gas." Attention was given to designing equipment for a new in principle method for supplying municipal and household consumers and agricultural facilities with liquefied gas, and to creating butane-propane air-mixing installations for spanning peak loads. Also for finding technical facilities for a centralized supply to consumers on the basis of regional evaporating liquefied gas stations.

The institute continues the development of measures and technical facilities for efficient utilization of gas, taking into account reducing air pollution and protecting the environment (creating improved burners, new methods for liquefying gas, reducing gas losses and more efficient consumption).

The Giproniigaz prepared recommendations for raising the efficiency of labor at farms, improving the utilization of fixed capital, improving management, planning, accounting and calculating the production cost of gas sold, and setting the price.

2291
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INCREASE IN COAL PRODUCTION REPORTED

Moscow EKONOMICHESKAYA GAZETA in Russian No 29, Jun 1979 p 3

[Excerpts from article by I. Sharov: "Entering the Second Half of the Year"]

[Excerpts] During the first six months of this year, preliminary estimates have shown that miners extracted 362.6 million metric tons of coal, or four million tons more than over the same period last year. The established plan has been somewhat increased. However, there is a shortage of 2.7 million metric tons in meeting the additional quota for coal extraction.

Many coal enterprises continue to show serious deficiencies in organization of work and production, in the use of working time and mining equipment. For these reasons a number of associations, and many collectives of mines and sections are not meeting the quota for coal recovery. Work has been permitted to lag in the Leninskugol', Gidrougol', Krasnoarmeyskugol', Stakhanovugol' and Aleksandriyaugol' associations.

According to a decree of the Central Committee of the CPSU and the Council of Ministers of the USSR "On Providing the National Economy and the Populace with Fuel, Electricity and Thermal Energy in the Autumn-Winter Season of 1979/80," the Ministry of the Coal Industry of the USSR and the Ministry of Railroads have been commissioned to ensure unconditional satisfaction of quotas on loading and unloading coal as established for June-December. Particular attention has been given to the necessity for loading and shipping coal from the stockpiles of mines, open pits and dressing mills.

Up until now, the transportation of coal from some fields has been unsatisfactorily organized. For instance, mainly due to interruptions in the flow of cars for loading from coal establishments of Kuzbass, there was a shortage in June of 500,000 metric tons in the planned fuel shipment.

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COAL QUALITY GETTING WORSE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Jun 79 p 2

[Article by D. Shamarakov, deputy chief of the Main Technical Administration on Operation of Power Systems, Ministry of Power of the USSR: Why is the Quality of Fuel Getting Worse?"]

[Text] The editors have received a number of replies to the article "The Value of Fuel" by Doctor of Economic Sciences Yu. Yakovets and Candidate of Technical Sciences V. Nemchinov. Some of these, in particular the responses of the Office of State Standards of the USSR, the Ministry of the Coal Industry of the USSR, Tulaenergo and Estonglavenergo, were published in issues for 26 October and 24 December 1978, and 21 Mach of this year. Herewith the editors continue the discussion of this topic.

The reply published on 21 March of this year by Comrade Nuzhdikhin, deputy minister of the Coal Industry of the USSR is not clear as to why there is such a catastrophic deterioration in the quality of energy-producing coals being supplied to fossil-fuel electric power plants. Over the past twelve years the average heat of combustion of Kizel and Karaganda coals has fallen by 600 kcal/kg, of Kuznetsk coals -- by 900 kcal/kg, and of Donetsk coals -- by 1200 kcal/kg, or by 11-18 percent.

The reduction in coal quality depletes resources. For instance a reduction in heat value by nine percent has required additional deliveries of 18 million metric tons of coal to fossil-fuel electric power plants, and transportation has required the use of about 300,000 railroad cars.

Not once over the past 15-20 years has the Ministry of the Coal Industry come forward as a developer of State standards with a proposal on improving the normalized indices. As a result, the Office of State Standards of the USSR confirms deteriorated indices with each review. Up to 40 million metric tons of coal are delivered yearly to fossil-fuel electric power plants with departures from quality standards. And this is a considerable amount -- 20 percent of all energy-producing coal used by these power plants.

Spot checks on coal quality done by electric power plants show that in some cases the ash content given on accompanying documents was 3-10 percent lower than the actual level. This shows that the divisions of technical control in coal enterprises are not carrying out their functions, and that control on the part of inspection by the State Committee for Material and Technical Supply is inadequate. It would seem that the authors of the article "The Value of Fuel" are right: the time has come to improve the control service by setting up a central inspection subordinate to the Office of State Standards of the USSR. As to the reduction noted by Comrade Nuzhdikhin in the number of complaints about coal quality on the part of electric power plants, the main reason for this is that they lack the staff to handle the extensive paperwork on filing complaints.

The Ministry of Power of the USSR feels that it is proper to raise the issue of standardizing the sulfur content in coals. The loss incurred by power plants and the environmental impact when coal is burned with high sulfur content is obvious and enormous. Incorporation of this index into standards and prices will stimulate the development of effective measures to reduce the sulfur content of coals in enterprises of the coal industry.

The method mentioned by Comrade Nuzhdikhin for neutralizing sulfur oxides by the carbonate part of fuel shales when they are burned together has not given the expected results. It was established in the course of this experiment that when 10-15 percent shale is added, the sulfur oxide emissions are reduced by only 18-20 percent. But at the same time, intensive slag formation occurs in the boiler units, and their productivity and reliability are reduced. More extensive tests of this method are not advisable: costly reconstruction of the fuel management of electric power plants is needed.

In connection with the complication and increasing unit power of equipment in electric plants, coal quality is becoming a decisive factor that determines the reliability and economy of operation of power plants. The main way here is enrichment of energy-producing coals. The promise of this path has been proved by world-wide and Soviet experience. In particular, joint research by institutes of the Ministry of the Coal Industry of the USSR and the Ministry of Power of the USSR in 1962-1965 showed the high national economic effectiveness of enrichment of energy-producing coals of the Kuznetsk, Podmoskovnyy and Ekibasstuz coal fields. This work must continue.

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BRIEFS

ZAPOROZHSKAYA GRES--The Zaporozhskaya GRES was the first among the thermal electric power stations of equivalent capacity to generate 10 billion kilowatt-hours of electricity since the first of the year. This goal was reached considerably earlier than it was last year. Saved fuel was used to generate 18 million kilowatt-hours of electricity. [Text] [Moscow PRAVDA in Russian 21 Jun 79 p 2] 11746

IMPROVED PROSPECTING EQUIPMENT--Devices that make it possible to determine the presence of reserves and the quality of coal, ore and oil have been developed by scientists at the L'vov Physicomechanical Institute in the Ukrainian SSR. This equipment, which was awarded the gold medal of the Exhibition of Achievements of the National Economy of the USSR, increases the effectiveness of geological surveying and expands the possibilities for using high-speed drilling. When used for prospecting, the instruments send out beamed pulses that "excite" the atoms of minerals. By recording the return signals, geologists can, with great accuracy, determine the boundaries of beds and the amount of impurities in deposits and can monitor the movement of gas and oil. [Text] [Kiev RABOCHAYA GAZETA in Russian 21 Jun 79 p 2] 11746

SURGUT-POLOTSK OIL PIPELINE--Oil is beginning to fill the main section of the Surgut-Polotsk oil pipeline. This will make it possible to put this trunk pipeline into operation far ahead of schedule. The laying of this new oil pipeline began last fall. It is more than 3,000 kilometers long. Despite the severe winter, units from the Ministry of Construction of Petroleum and Gas Industry Enterprises achieved many record-breaking indicators during the construction of this pipeline. The plan called for the first stage of this pipeline, which is 1,252 kilometers long, to go into operation during the fourth quarter of this year, but the builders have decided to start feeding oil into it next month. [Text] [Moscow PRAVDA in Russian 23 Jun 79 p 1] 11746

KOSTROMSKAYA GRES--Improving the unit capacities of electric power stations and power-producing machines is one of the most important areas of electric power engineering work in the USSR. The Kostromskaya GRES is a bright example of this. It is part of the Unified Power System in the central part of the country and satisfies our nation's growing needs for electricity. The Kostromskaya GRES has been built and is producing electricity. Its third stage is being built at shock rates. The builders are installing a unique power plant with a capacity of 1.2 million kilowatts. After the construction work is completed, this station will be one of the largest in the country. The work shifts led by installers V. Vorob'yev and P. Ponomarev and electric welder V. Obabkov are doing very good work at the station. [Text] [Moscow IZVESTIYA in Russian 22 Jun 79 p 1] 11746

METHANE AS FUEL--The explosive gas methane has become a fuel in many boilers in mines throughout the Donets Coal Basin. It is fed directly from the wells into the fire chambers, which saves much coal. Until now, a considerable part of this gas has been burned in torches or discharged into the atmosphere. Actually, "pure" methane cannot be fed into boilers, because it can explode. This prohibition has been removed by a suggestion from scientists at the Donets Polytechnic Institute. They developed a method of enriching methane with a small amount of natural gas, which makes boiler operation completely safe and enables the burners to function automatically. The use of this cheap fuel in only a single boiler will save 4,000 tons of coal during the heating season. [Text] [Moscow PRAVDA in Russian 30 Jun 79 p 3] 11746

ABOVE-PLAN COAL PRODUCTION--The miners at the Kapital'naya mine are in the vanguard of the competition among the leading workers in the Kuznetsk Coal Basin, and have already successfully completed their assignment for this five-year plan. Since the beginning of the year they have produced almost 100,000 tons of above-plan coal. Among the leaders in the competition is Novikov's crew, which has the highest labor productivity indicators. [Text] [Moscow IZVESTIYA in Russian 4 Jul 79 p 1] 11746

PARAFFIN DEPOSIT PREVENTION--Scientists at TurkmenNIPIneft' are testing a new method for preventing paraffin deposits in wells by the introduction of a special reagent into the pumping pipes through batchmeters. If the experiment is successful, the basic stock of wells will be used much more productively and the work of cleaning pumping pipes will be easier. [Excerpt] [Ashkhabad TURKMENSKAYA ISKRA in Russian 22 Jun 79 p 2] 11746

SAMOTLOR OIL WELLS--Efforts are being made to complete the 10th Five-Year Plan assignment for drilling deep oil wells at

Samotlor by 2 September of this year, which is the All-Union Day of Gas and Oil Industry Workers. [Text] [Moscow IZVESTIYA in Russian 8 Jul 79 p 1] 11746

CENTRAL SIBERIAN PIPELINE--The collective of the Central Siberian Administration of Trunk Pipelines maintains the first oil pipeline in the country along the Aleksandrovskoye-Tomsk-Anzhero Sudzhensk route. This pipeline is made of welded, large-diameter pipe and has resulted in a reduction in the cost of transporting gas. During the first 6 months of this year, 3.3 million kilowatt-hours of electricity was saved. [Excerpt] [Moscow IZVESTIYA in Russian 4 Jul 79 p 1] 11746

NIZHNEKAMSKAYA GES--Testing of the first power-producing unit has been completed at the Nizhnekamskaya GES, which is under construction as the last stage in the Kama power chain. After it was placed under a commercial load, the turbogenerator produced electricity that was fed into the combined power system along the Middle Volga. The installers and operators at the GES are exerting every possible effort to see that the second unit goes into operation at this hydroelectric station this year. [Text] [Moscow PRAVDA in Russian 10 Jul 79 p 1] 11746

ENERGY ECONOMY LECTURES--A group of scientists from Leningrad arrived in Vygorskiy, Volkhovskiy, Gatchinskiy, Luzhskiy, Slantsevskiy, and Kirovskiy Rayons (Leningrad Oblast) yesterday to give a cycle of lectures devoted to explaining and propagandizing the resolution passed by the CC CPSU and the USSR Council of Ministers that is entitled "On Supplying the National Economy and the People With Fuel, Heat and Electricity During the Fall and Winter Period of 1979-1980." The lecture cycle was organized by the Leningrad House of Scientific and Technical Propaganda. Candidates of Economic Sciences A.M. Fal'kov and L.I. Grishin, Candidate of Technical Sciences V.T. Melekhin and other lecturers from the Znaniye Society will appear before workers at enterprises in these rayons. The first lecture was given yesterday, in Volkov. Candidate of Technical Sciences A.S. Kvartenko spoke on the subject of "The Struggle for Economy and Thriftiness of Fuel and Energy Resources in Relation to the Resolution of the CC CPSU and the USSR Council of Ministers." All of the lectures will be given between 20 and 26 June. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 21 Jul 79 p 2] 11746

EQUIPMENT FOR MONITORING DRILLING--State tests of an automatic complex of instruments for monitoring the course of well-drilling operations have been completed. The readings appearing on the complex's control panel make it possible to have a continual determination of such parameters as weight of the

drilling tool, the speed of rotation of the rotor, the solution consumption rate, and others. The complex was designed by specialists at the Andizhansk Design Office of the Soyuznefteavtomatika Association. The economic effect caused by its introduction will by 26,000 rubles per year. This is the first such set of equipment in this country, and it will give a complete description of the performance of a drilling rig. This innovation will make it possible to eliminate emergency situations for all practical purposes and always conduct drilling operations under optimum conditions. The automatic unit does not require an additional power source. Oil men in Surgut, the Ukraine and Checheno-Ingushetia gave the work of the Andizhansk instrument builders an excellent rating. [Text] [Tashkent PRAVDA VOSTOKA in Russian 21 Jun 79 p 3] 11746

AUTOMATED BOILER--Managing a boiler is a troublesome business, since it requires constant maintenance and monitoring, which means a large staff of workers and engineering and technical personnel. Specialists at the Gazoapparat plant in Leninabad, together with the USSR Ministry of the Construction Materials Industry's Scientific Research Institute of Sanitary Engineering, have developed a design for a boiler that operates automatically and an automated gas-burner unit that are controlled by a single control panel. Industrial production of these inventions has begun. This year, 200 of the gas-burner units will be manufactured. In the future, their output will be increased by a factor of 20. These systems are intended for the efficient operation, on gas, of automated boiler units with a rated productivity of 40 cubic meters of water per hour. The pressure in the boiler is monitored by an automatic unit. The first group of automated gas-burner units was sent to a Minsk heating equipment plant. Gazoapparat is a young enterprise, and began operating only last year. Production work was begun before the construction and installation work was finished. This enabled the collective to take part in the planned production activities quite rapidly. [Text] [Dushanbe KOMMUNIST TADZHIKISTANA in Russian 23 Jun 79 p 1] 11746

NUREKSKAYA GES--The filling of the dam has been completed at the construction site of the Nurekskaya GES. The builders have already put 50 of the planned 54 million cubic meters of soil into place. At the same time, they are installing the ninth (and last) power unit at the station; it has a capacity of 300,000 kilowatts. The hydraulic power construction workers have vowed to finish building the 2.7-million kilowatt Nurekskaya GES a year ahead of schedule, in time for the 62d anniversary of the Great October Revolution. [Text] [Moscow TRUD in Russian 22 Jun 79 p 1] 11746

POWER LINE FOUNDATIONS--An unusual high-voltage electric power transmission line is being built in the northern part of Tyumenskaya Oblast. Here, for the first time, the power engineers are placing the "bridge" on a so-called open foundation, which has made it possible to reduce the length of the installation work period. No matter how skeletal and light it may seem to be when viewed from the side, a power transmission line's support tower must rest on a foundation. About 10 pilings are usually driven in under the base of such a tower, but this is too complicated to do under swampy conditions. What if the pilings are not driven in? Foundation areas have appeared on the outskirts of Surgut. Pilings that should have been driven several meters into the ground are arranged in a certain order on the surface and then fastened to each other. A strong base is thus formed. This invention has yet another advantage: power transmission lines can now be erected entirely from the air. For several years now, helicopters have been used to set up support towers and lay the wire. The only operation they could not do up until now was install the pilings. This year alone, the use of daring engineering decisions will make it possible to erect almost 1,300 kilometers of power transmission lines to the gas and oil fields; this is triple the amount erected during the first year of this five-year plan. [Text] [Moscow TRUD in Russian 22 Jun 79 p 1] 11746

ATOMMASH WORKERS' GOALS--This year, the builders of Atommash have been given the following assignments: finish work valued at 250 million rubles, including 182 million rubles' worth of work on actual projects at the gigantic plant; by 22 December, put into operation the enterprise's second stage, which is designed to produce 1 million kilowatts' worth of atomic power-producing equipment and will increase the plant's capacity to 4 million kilowatts; finish construction of a plant for the production of large reinforced concrete panels that will enable 280,000 square meters of living quarters to be built per year; put into operation a concrete-mix plant with a capacity of 400,000 cubic meters per year, along with other projects for their own work base; release for use 300,000 square meters of living quarters, 12 kindergartens, 2 schools, a professional and technical school, a polyclinic, and a number of other projects of cultural and domestic significance. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 22 Jun 79 p 1] 11746

SOLAR HEATING FOR HOMES--The Tadzhik SSR Gosstroy has approved a plan for a single residence with solar heating that was developed by the Tadzhik State Institute for the Planning of Industrial Buildings and Structures for Agriculture. The specialists propose to install minibasins on the roof of the building that will be connected to a water line. Upon being

heated, the water will enter the house's heating system. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 22 Jun 79 p 3] 11746

WELD SEAM MONITOR--A charged particle accelerator will take over the job of monitoring the quality of seams in the steel housings of nuclear reactors. The first such unit, which is capable of X-raying steel plates up to 600 millimeters thick instantaneously, has been manufactured by specialists at the Scientific Research Institute of Electrophysical Equipment imeni D.V. Yefremov and sent to the Atommash plant. [Text] [Baku VYSHKA in Russian 6 Jul 79 p 1] 11746

CHELYABINSK GAS PIPELINE--In Chelyabinskaya Oblast, construction work has been completed on the Dolgoderevenskoye-Krasnogorskiy gas pipeline, which is a branch line of the Vyngapur-Chelyabinsk trunk pipeline. The work was done by mechanized columns from the Uralneftegazstroy trust. Gas will soon be arriving at enterprises in the Southern Urals. [Text] [Baku VYSHKA in Russian 20 Jun 79 p 1] 11746

PIPELINES IN KUYBYSHEVSKOYE RESERVOIR--The settlement of Klimovsk, which is several kilometers from Kuybyshev, is as noisy as an aroused beehive. The first group of builders from Construction and Installation Administration No 4 of the Azmorneftestroy trust has arrived, under the leadership of Work Superintendent D. Gaibov and Foremen E. Khishmet and S. Yakovenko. Its job is to lay four branches of gas pipeline that is 720 millimeters in diameter along the bottom of the Kuybyshevskaya Reservoir. The total length of these segments will be more than 20 kilometers. Along with the "marine engineers," one of Chernomortekhflot's suction dredges, which is working on deepening the bottom in this area, will be used to lay the underwater gas pipeline. The builders will be supported in their difficult assignment by a caravan of ships from the Caspian Administration of the Oil Tanker Fleet that has already arrived, the Suleyman Vezirov mechanized pipelayer, and other powerful construction equipment. [Text] [Baku VYSHKA in Russian 20 Jun 79 p 2] 11746

LISICHANSK-NIZHNEDNEPROVSK OIL PIPELINE--Siberian oil continually flows through steel pipes to the Lisichansk oil refining plant. The finished product is then sent to consumers in railroad tank cars. This is both expensive and troublesome. The inconvenience will increase when the second stage of the plant goes into operation and both production output and the range of products are expanded. In order to avoid this, it has been decided to build a 300-kilometer pipeline from Lisichansk to Nizhnedneprovsk. The basic trunk line will have branches to carry oil closer to the consumers in Voroshilovgradskaya, Khar'kovskaya, Donetskaya, Dnepropetrovskaya, and Zaporozhskaya

Oblasts. However, will this not lower the quality of the product? No. It has been proposed that spherical storage and separation tanks be built along the trace. The pipeline plan was developed by the collectives of the Yuzhgipronefteprovod and Ukrgiprorechtrans institutes. [Text] [Kiev RABOCHAYA GAZETA in Russian 30 Jun 79 p 2] 11746

BULLA MORE-DASHGIL' GAS CONDENSATE PIPELINE--A gurgling flow of gas condensate from the Bulla-more field moves through pipes to the pumping station in Dashgil', which is on dry land. The new 30-kilometer pipeline, which lies along the bottom of the Caspian Sea, is the third line of steel pipes linking the marine enterprises in the Bakinskiy Archipelago to the shore. It has passed its industrial tests and from now on will increase the flow of this valuable fuel into the storage tanks by one-third. The following workers distinguished themselves during the construction of the underwater pipeline: metalworkers A. Bagirov and S. Eybatov; welder N. Chinakhov, and Crew Chiefs V. Dubinin and N. Lagovskiy, from the Azmo-neftegazstroy trust's Construction and Installation Administration No 3. [Text] [Baku VYSHKA in Russian 26 Jun 79 p 1] 11746

MAYNSKAYA GES APPROVED--Lengidroproyekt's Technical Council has approved the plan for the Maynskaya GES. "The dam will span the Yenisey River at a distance of 21 kilometers from the Karlov range, where the magnificent Sayano-Shushenskaya station is being built," says M. Aleksandrov, the project's chief engineer. "In comparison with the Sayan giant, this new GES's power is quite small -- only 320 megawatts. However, the effect it will have on the power indicators and the hydrological regime of the Yenisey is quite large. Essentially, the Maynskaya GES is a branch of the Sayano-Shushenskaya GES that will function as a counterregulator. If, for instance, the situation in the Siberian power system requires that the operation of the Sayano-Shushenskaya station be temporarily halted, the flow of water into the downstream range will cease, which will more or less stop the river. The Maynskiy hydraulic engineering complex and its reservoir will help balance the drainage." Three rotating-blade turbines and hydraulic power generators will be used at the Maynskaya GES. They are being manufactured by the Leningrad Metal Plant and Elektrosila associations. The first unit is supposed to start operating in 1982. The Maynskaya GES will be controlled from the Sayano-Shushenskaya station. [Text] [Moscow NEDELYA in Russian 24 Jun 79 p 2] 11746

GAS PIPELINE IN AZERBAYDZHAN--A new pipeline that is being built in Azerbaydzhan will finish the basic gasification of that republic. The 378-kilometer trunk line will cross the republic from east to west and will make it possible to satisfy

all the needs of most of the nearby cities and agricultural regions for fuel. The welding of lengths of large-diameter pipe has already begun. Crossovers of railroads and highways are being built. Detachments of mechanics from the Rostov and Groznensk pipeline construction trusts are working together with the Azerbaydzhani builders. The new gas pipeline should be in operation by the end of the year. When it does begin operating, the system's capacity will be increased by a factor of more than 1.5. The flow of gas through the Kazakhskaya compressor station into Armenia and Georgia will increase. [Text] [Baku VYSHKA in Russian 3 Jul 79 p 1] 11746

UNDERGROUND GASEOUS FUEL STORAGE--Scientists from Kiev have altered the traditional concept of storage containers for petroleum products. They have suggested a simple and safe method for storing gaseous fuels (ethylene, in particular) beneath the ground. Because of this it has now become possible to implement industrial storage of this dangerously explosive product. "In an unusual storage tank, the construction of which has begun in Eastern Siberia, ethylene will be kept in rock salt deposits at a depth of 1.5 kilometers," says N. Stulakova, who originated the project. "It is being built with the help of water that is injected into the bed under pressure. The salt is washed away and brought to the surface through pipes." [Text] [Baku VYSHKA in Russian 28 Jun 79 p 1] 11746

ELECTRICITY IN OSHSKAYA OBLAST--The electric power stations in Oshskaya Oblast have generated their billionth kilowatt-hour of electricity since the first of the year. At the beginning of the 10th Five-Year Plan, it took the entire year to reach this figure. The flow of electricity has been increased primarily because of the beginning of operations at the Toktogul'skaya hydroelectric power station. The Uch-Kurganskaya GES and the Oshskaya TETs began to produce more cheap electricity. Electricity produced by the oblast's power stations is also sent to the fraternal republics of Central Asia. [Text] [Frunze SOVETSKAYA KIRGIZIYA in Russian 14 Jun 79 p 1] 11746

CONCRETE-POURING RECORD--S. Fettayev's crew of concrete workers from the Naryngidroenergostroy Administration has beaten the record it set during the construction of the Toktogul'skaya GES. Having improved its layered, mechanized method of laying concrete, the crew raised its daily output to 1,000 cubic meters. Because of this, it poured its hundred thousandth cubic meter of concrete into the dam of the Kurpsayskaya GES 7 months ahead of schedule. [Text] [Moscow IZVESTIYA in Russian 23 Jun 79 p 1] 11746

TYUMEN' OIL INDUSTRY ANNIVERSARY--The oil industry in Tyumenskaya Oblast is celebrating its 15th anniversary. In recent

years, under the severe conditions present in Western Siberia, a large industry that is now providing all of our increase in oil production was created and developed. In 1979 the Tyumen' oil fields should produce 275 million tons of liquid fuel and 115 billion cubic meters of gas. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 30 May 79 p 2] 11746

UFA-MAGNITOGORSK POWER LINE--The first support towers have been erected for yet another electric power transmission line in Bashkiria. The line, which is 285 kilometers long, "stepped" across the Ural Mountains and the taiga from Ufa to Magnitogorsk. It connects the industrial centers of this autonomous republic to the largest electric power stations in the Southern Urals. [Text] [Moscow IZVESTIYA in Russian 21 Jun 79 p 1] 11746

CHEBOKSARSKAYA GES--Equipment for the Cheboksarskaya GES's first generator and the huge metal gates that will be installed in the dam and the electric power station building has begun to arrive at the construction site. This new GES is the final stage in the Volga power chain. Its first two turbines will be in operation before the end of this five-year plan. [Excerpt] [Moscow PRAVDA in Russian 30 Jun 79 p 2] 11746

ROGUNSKAYA GES--Construction work is proceeding on the Rogunskaya GES, which will have a capacity of 3.6 million kilowatts and will be the largest GES in Central Asia. A rock-fill dam 335 meters tall is being built in a deep canyon. The Rogunskoye "sea" will hold 14 billion cubic meters of water to irrigate land in Tadzhikistan, Uzbekistan and Turkmenia. Preparatory work is now being done on the site. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 4 Jul 79 p 2] 11746

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FLOODING IN TYUMEN'

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Mar 79 p 4

[Article by V. Noskov, SOTSIALISTICHESKAYA INDUSTRIYA's reporter]

[Text] Coming to Western Siberia after a long and hard winter, the warm weather brought a surprise to the inhabitants of Tyumen' and the neighboring areas. Into rivers and streams the waters from the melted snow poured from the Urals into the Tura and the Tavda, converting them into future torrents. L. A. Yanin, chief of the oblast staff and deputy chairman of the Tyumen' Oblispolkom, described the struggle with the elements as follows:

"It cannot be said that we were not ready for a flood. We were warned by the hydrologists' forecasts that the water levels of the shallow Tura and Tavda would be as high as in 1927. But they exceeded the record height by 15 centimeters at the start and later by 35 centimeters, and they are still rising.

"The industrial enterprises, schools, institutions and dwellings on the outskirts of Tyumen' were threatened with inundation. The oblast staff took emergency measures to combat the elements. Shock detachments were formed of workers, engineering and technical personnel, office workers, students and pupils, who are building a dike.

"But nature is nature. Some buildings and houses were swept away. About 3,000 inhabitants of Tyumen' had to be evacuated and lodged in schools and trailers. Farmlands and fields prepared for spring sowing were flooded. Suburbs and villages were cut off from the oblast center, but all they need is being brought to them by helicopters. The inhabitants led their cattle to safe places in time, and there were no losses.

"According to our calculations, the flood will not subside for several days, so that the struggle with the elements continues. Moreover, the water level is beginning to rise around Tobol'sk, Yalutorovsk and other cities and settlements of the oblast, and preparations are in full course there as well.

"Tyumen's inhabitants are living as usual."

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